

CLAIMS

[Claim 1] A semiconductor manufacturing device comprising a processing chamber including a susceptor for supporting a substrate, wherein the susceptor has a main body containing a wall forming inside an electrode arranging space substantially flat and parallel to the substrate and multiple pillars joining the bottom and ceiling of the wall; and a high-frequency electrode installed with a gap between the electrode and at least the wall or at least the pillar within the electrode arranging space.

[Claim 2] A semiconductor manufacturing device according to claim 1, wherein the distance from the high-frequency electrode to the supporting surface for supporting the substrate provided on the susceptor surface higher than the high-frequency electrode, is set smaller than the distance from the high-frequency electrode to the susceptor rear surface lower than the high-frequency electrode.

[Claim 3] A semiconductor manufacturing device according to claim 1 or claim 2, wherein the electrode arranging space is insulated from the atmosphere in the processing chamber and is connected to the atmosphere outside the processing chamber.

[Claim 4] A semiconductor manufacturing device according to claim 1, claim 2, or claim 3, wherein the high-frequency electrode is comprised of a plate formed with insertion holes where the pillars are inserted.

[Claim 5] A method for manufacturing semiconductor devices comprising the steps of:

supporting a substrate on a susceptor installed in a processing chamber,

supplying and exhausting a process gas to and from the processing chamber, and

performing plasma processing of the substrate by the susceptor having a main body containing a wall forming inside an electrode arranging space substantially flat and parallel to the substrate and multiple pillars joining the bottom and ceiling of the wall; and a high-frequency electrode installed with a gap between the electrode and at least the wall or at least the pillar within the electrode arranging space.